

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 28-33, 51-53, 55-58, 60 and 61 are now present in this application.

Claims 28, 51, 60 and 61 are independent.

Claims 28 and 51 are amended. No new matter is involved.
Reconsideration of this application, as amended, is respectfully requested.

Information Disclosure

The Examiner has not provided Applicants with an indication that he has reviewed the copy of co-pending Application No. 09/823,122, filed April 11, 2001, believed to be pending in Patent Examining Group 1725, a copy of which was filed in this Application pursuant to MPEP 2001.06(b) on April 30, 2004. An indication that this co-pending Application has been reviewed is respectfully requested from the Examiner in the next Office Action.

Interview

Applicants acknowledge with appreciation the courtesies extended by Examiners Tugbang and Nguyen to Mr. Robert J. Webster, their undersigned representative, during the personal interview held on January 11, 2005. During that Interview, Examiners Tugbang and Nguyen agreed that the claims, as

amended, appeared to patentably define over the applied art, including the Miura reference.

Entry of Amendments

Applicants respectfully submit that this Office Action was prematurely made final for reasons discussed in the next section which contains arguments traversing the rejection of claims 28-33, 51-53 and 55-58 under 35 U.S.C. §112, second paragraph.

Because of this, the Amendments should be entered as a matter of right under 37 C.F.R. §1.111.

Additional reasons to enter the Amendments are that (1) they materially reduce and simplify issues raised under 35 U.S.C. §112, second paragraph, thereby placing the Application in better form for appeal, and (2) positively recite patentable subject matter with respect to the applied art, which was argued as giving patentability to the claims in the previous Amendment.

Rejection Under 35 U.S.C. §112, 2nd Paragraph

Claims 28-33, 51-53 and 55-58 stand rejected under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed.

Initially, Applicants note that claims 31-33 are canceled without prejudice. As a result, the rejection is moot with respect to claims 31-33.

Applicants thank the Examiner for pointing out the misspelled word in claim 28. Applicants have amended claim 28, correcting the misspelling.

The Examiner alleges that the phrase “filling a . . . a hole” in claim 28, lines 3-6, is vague and indefinite because it is uncertain that the solder resist of insulating resin is filled in the hole or not.

Applicants respectfully submit that the presentation of this ground of rejection was not necessitated by Applicants’ amendment of claim 28, which merely changed the claim language from the passive voice (i.e., changing “is filled” to -- filling --). The feature of claim 28 that is the basis for this rejection is the same now as it was prior to the Amendment filed on June 30, 2004.

Accordingly, the finality of this Office Action is improper and must be withdrawn.

Turning to the merits of the rejection, Applicants note that what is recited in lines 3-6 of claim 28 is clear and can be read in conjunction with what is recited in the last clause of claim 28, which clearly recites that the spaces are filled to the same height as the upper surface of the circuit patterns.

Applicants respectfully submit that the metes and bounds of claim 28 are clearly set forth.

With respect to the terms “the via holes” and “the through holes,” Applicants have amended “the via holes” to read - - via holes - - and have deleted the “the through holes” language, thereby overcoming the rejection.

With respect to the term “and/or,” Applicants continue to assert that the metes and bounds of claims 51, 52 and 55 are clear to one of ordinary skill in the art. Claims 51, 52 and 55 simply use the shorthand “and/or” notation in a single claim instead of writing a plurality of claims, one claim reciting “and” and the other claim reciting “or.” This reduces the number of independent claims that the Examiner has to search and the number of independent claims that Applicants have to pay for, while clearly setting forth the metes and bounds of the claimed invention. Each alternative method is clearly set forth in each of claims 51, 52 and 55.

Additionally, as pointed out in the Amendment filed on June 30, 2004, MPEP 2173.05(h), section II clearly authorizes use of alternative features in claims.

Nevertheless, solely in the interest of orderly procedure, the alternative language has been canceled. This amendment has not narrowed the scope of the claims in any way.

Applicants respectfully submit that the metes and bounds of claims 51, 52 and 55 are clear to one of ordinary skill in the art.

Reconsideration and withdrawal of this rejection of claims 28-33, 51-53 and 55-58 under 35 U.S.C. §112, second paragraph are respectfully requested.

Rejection Under 35 U.S.C. §102

Claims 28, 29, 33, 51-53 and 58 stand rejected under 35 U.S.C. §102(b) as being anticipated by JP10-219,237 to Miura et al. (hereinafter, "Miura"). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

Initially, Applicants note that claim 33 is canceled without prejudice and that this rejection is moot with respect to claim 33.

Applicants note that Miura does not disclose directly abutting its squeegees to the surface of the circuit board. Figs. 2 and 3 of Miura disclose that the squeegees abut the printing plate 11, which is above the circuit board 1. None of Miura's figures shows a squeegee directly abutted to the surface of the printed circuit board as recited in claims 28-30, or abutted directly on the upper surface of the first circuit pattern, as recited in claims 51-53 and 55-58.

The only thing that Miura discloses as abutting the squeegee is the printing plate 11. Accordingly, Miura does not anticipate claims 28, 29, 51-53 and 58.

Moreover, Examiners Tugbang and Nguyen agreed during the Interview that Miura does not anticipate these claims.

Accordingly, independent claims 28 and 51 are not anticipated by Miura.

Moreover, because claim 29 depends from claim 28 and because claims 52, 54 and 58 depend from claim 51, and contain all the features of those respective independent claims, claims 29, 52, 54 and 58 are also not anticipated by Miura.

Accordingly, reconsideration and withdrawal of the rejection of claims 28, 29, 33, 51-53 and 58 under 35 U.S.C. 102(b) as anticipated by Miura is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 30-32 and 55-57 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Miura in view of U.S. Patent 6,276,055 to Bryant et al. (hereinafter, "Bryant"). These rejections are respectfully traversed.

Complete discussions of the Examiner's rejections are set forth in the Office Action, and are not being repeated here.

Initially, Applicants respectfully note that claims 31 and 32 have been canceled without prejudice, thereby mooting the rejection with respect to claims 31 and 32.

Miura does not disclose or suggest the claimed invention at least for the reasons stated above. Bryan is not applied to provide the features missing in Miura. Bryan is only applied to teach plural squeegee strokes to fill the vias.

So, even if Miura were modified to use plural squeegee strokes, Miura would still not disclose or render obvious the claimed invention.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention, this rejection is improper and should be withdrawn.

Reply to Examiner's "Response to Arguments"

The Examiner states, on page 5 of the outstanding Office Action, that "Fig. 1 of Miura clearly shows the solder resist in the spaces between the surface side surface patterns are the same height as the upper surface of the circuit pattern (4)."

Applicants respectfully disagree, and point out that what is recited in claim 28, for example, is "filling the solder resist of insulating resin in the spaces among the surface side circuit patterns to the same height as the upper surface of the circuit patterns."

Element (4) is not an upper surface of the circuit pattern. The Upper surface of the circuit pattern is a via hole conductor. Element 4 is a lower surface of the circuit pattern.

New Claims

Claims 60 and 61 are added. Support for claims 60 and 61 is found throughout Applicants' original disclosure including, for example, Figs. 4-7 and the associated portion of the specification, including originally filed claims.

Applicants respectfully submit that new claims 60 and 61 are patentable over the applied art at least for reasons discussed above regarding the patentability of claims 28 and 51 with respect to the applied art.

Additional Cited References

Because the remaining references cited by the Examiner have not been utilized to reject the claims, but have merely been cited to show the state of the art, no comment need be made with respect thereto.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections and withdraw the finality of the outstanding Office Action. Because the finality of the Office Action should be withdrawn, entry of all amendments is proper under 357 C.F.R. §1.111. All amendments should also be entered because they respond to the objection, and to the rejection based on 35 U.S.C. §112, second paragraph, thereby reducing and simplifying issues for continued prosecution or appeal of this Application.

Application No.: 10/043,146
Art Unit: 3729

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It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Jr., Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

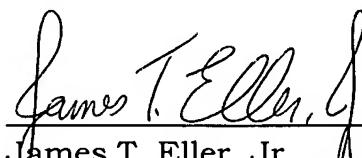
Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By:



James T. Eller, Jr.

Reg. No.: 39,538
P.O. Box 747
Falls Church, Virginia 22040-0747
Telephone: (703) 205-8000

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